Questions and Answers About DES Exposure During Pregnancy And Before Birth

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Prepared in cooperation with the
DESAD Project

(Diethylstilbestrol and Adenosis)

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Diethylstilbestrol and other DES-type drugs

Developed about 40 years ago, diethylstilbestrol (also called DES or stilbestrol) is a manmade (synthetic) estrogen hormone. From the 1940's onward, many physicians prescribed DES or other DES - type drugs to women who had complications of pregnancy. These conditions included:

- vaginal bleeding with risk of possible miscarriage
- diabetes of the mother
- other less well defined pregnancy situations

Early experience in the 1940's suggested that pregnant women with these problems could benefit from treatment with DES. Mothers of perhaps several million young men and women were treated with DES - type drugs during pregnancy. (DES - type drugs that may have been prescribed to pregnant women are listed on pages 15 and 16.) In 1953, results of research done at the University of Chicago cast doubt that DES or other estrogens were as effective as first believed to prevent pregnancy complications.

DES or other estrogens should no longer be used during pregnancy. They are useful for certain other medical problems such as some menopausal effects, some cases of cancer of the breast and prostate, and in cases of estrogen hormone deficiency.

The problem

In 1971, physicians found a link between DES and cancer of the female reproductive organs. An unusual cancer of the vagina or cervix (the lower end of the uterus) had developed in a small number of young women whose mothers had taken DES - type drugs during pregnancy. This cancer—clear cell adenocarcinoma—is extremely rare. As few as 1.4 for every 10,000 DES - exposed daughters have developed this cancer. Usually, it has been found when they are in their teens or early twenties, with a peak occurrence between 17 and 21 years.

In contrast to the rarity of the cancer, noncancerous tissue changes are common in DES - exposed daughters. Depending on the location, the abnormally placed tissue is called vaginal adenosis, cervical erosion or ectropion. Other features such as structural changes in the vagina or cervix are described by a variety of names—hood, pseudopolyp, rim, collar or cockscomb cervix.

Problems of DES - exposed daughters with menstruation and infertility, although occasionally reported, have not been confirmed. There is no evidence that children of DES-exposed daughters will be affected.

In 1977, a followup study of the mothers who had participated in the 1950's in the University of Chicago research raised serious concern about the cancer -

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causing potential of DES in the mothers who took it during pregnancy. More cases of cancers of the breast, cervix, endometrium (lining of the uterus), and ovary were observed in the DES - exposed women than were observed in a comparable group of mothers who had not been exposed to DES. However, the numbers of cancers reported are not considered by some scientists to be significantly higher than those reported in unexposed women. Further study of these exposed mothers is underway.

Studies have determined that certain reproductive and urinary tract changes occur more frequently in DES - exposed sons than in sons not exposed before birth to DES - type drugs. Whether such abnormalities affect the fertility of DES - exposed sons is under study. Increased cancer risk has not been identified in DES sons.

Research is continuing in order to more clearly define the cancer risk for DES mothers and to learn more about long-term effects of DES exposure before birth on daughters and sons.

How do you check on DES exposure before birth?

If a mother has any recollection of having had drugs prescribed by her physician during pregnancy, especially to prevent miscarriage or to treat fetal complications from diabetes, it is possible that DES - type drugs may have been given to her.

She should tell her daughter or son because it is important that the fact of possible DES exposure become a part of the medical history of both her children and herself.

The mother of the exposed daughter or son should try to verify from medical records the dosage of the DES - type drug the mother received, when in the pregnancy it was first administered, and for how long a period. Exposed mothers and children have a right to have this information made available to them. The Surgeon General of the United States in the fall of 1978 sent a Physician Advisory to more than 400,000 physicians about DES, and recommended that they should:

- Notify women to whom they had prescribed the drug of their exposure and advise them about the need for followup medical care for themselves or their offspring.

- Check their medical records carefully when approached by patients inquiring about possible past exposure to DES in order to provide these patients with information as accurate and complete as possible.

- Provide this information without charge to the patient.

If you think you or a daughter or son may have been exposed, *don't wait to be notified.* Contact the physician who

cared for you or your mother during pregnancy, or the hospital where the birth took place. In many cases, however, it may be impossible to determine whether DES - type drugs were used.

What should be done about DES exposure?

Mothers, daughters or sons

Go to your physician—obstetrician-gynecologist, internist, pediatrician, family physician, or urologist. Describe what you know of your DES exposure. Ask that he or she place in your medical record the facts of your DES exposure for any future evaluation of DES- associated conditions.

Have an examination to check on possible effects of DES exposure. Remember it is *your responsibility* to seek medical advice and help. Follow your physician's directions about followup examinations.

Recommendations for DES-exposed daughters

If unusual bleeding or discharge from the vagina occurs at any age, see your physician at once. If you have no symptoms, you should have an examination at least once a year, beginning at age 14 or when you begin to menstruate, whichever is earlier. This will be the same examination with some amplification that every woman should have periodically when she reaches 20, or becomes sexually active.

The physician will perform a pelvic examination, take a Pap smear, and use an iodine solution to stain the lining of the vagina temporarily. The physician occasionally may use a magnifying instrument called a colposcope for the initial examination and for followup of DES - exposed daughters. The colposcope does not enter the vagina. The physician will explain the findings of the examination to you, or to your mother or father if you are a minor.

Areas of the vaginal lining that appear abnormal (including those that fail to stain with iodine) are biopsied and examined by a pathologist. (A pathologist is a physician trained to recognize abnormal cells in tissue samples under a microscope.) Such biopsies (removal and examination of small tissue specimens) can be performed in the physician's office with small biopsy instruments that usually cause little discomfort. Slight bleeding (less than a menstrual flow) may take place after the biopsy.

Treatment for DES - related conditions generally will not be necessary. If treatment is suggested, you may wish to seek a second opinion from a gynecologist and pathologist familiar with changes in DES - exposed daughters. Followup examinations at regular intervals will be recommended by your physician. Even though a vast majority of DES - exposed women will be found to be free of cancer, followup is important to insure early detection if cancer should develop. Treatment of DES - related cancers has been highly

effective especially when the cancers have been detected at a time when they are still small.

Hysterosalpingography, a test used to detect reproductive tract abnormalities, is not recommended as routine for DES-exposed daughters. However, some exposed daughters do have abnormalities in the shape of the uterus. The significance of these changes is as yet unclear.

What the examination of mothers includes

Mothers exposed to DES should have a yearly medical examination, the same examination that all women without any symptoms should have periodically if they are over 20, or younger if sexually active. This checkup includes a pelvic examination of the reproductive organs, with a Pap smear; a breast examination, beginning with a physical examination of the breasts, followed by mammography under the following conditions: no mammography for women under age 35; annual mammography for women between 35-39 only if they have a personal history of breast cancer; for women 40-49 with a personal history of breast cancer or with a history of breast cancer in immediate relatives; for all women over the age of 50.

Mammography should be considered at any age if a woman has symptoms or signs of breast cancer such as a breast lump.

DES - exposed mothers would benefit from monthly breast self-examination. If you do not know how to do this, ask your physician or his/her nurse to teach you.* Report any lump or out-of-the-ordinary appearance of the breast to your physician.

Why should sons be examined?

Medical examinations for DES-exposed sons are required to determine if the son has small or undescended testicles. These conditions increase the risk of cancer of the testes, whether or not he has been exposed to DES.

What is the risk of developing cancer if an individual's mother has taken a DES-type drug during pregnancy?

In exposed young men, there is no scientific evidence of increased risk of cancer.

In women born since 1940, there are about 250 reported cases of vaginal or cervical clear cell cancer with definite histories of the mothers having taken DES or DES - type drugs during pregnancy. It is estimated that there are one to two million daughters who have been exposed to DES during their mothers' pregnancy. Because of the small number of known cancers, the risk of developing cancer appears to be very small.

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* Write for a free booklet on "Breast Self-Examination to: Dept. DES, National Cancer Institute, Office of Cancer Communications, Bethesda, Maryland 20205

However small the risk of developing cancer, it is important for DES-exposed daughters to be examined as soon as possible after they have begun to menstruate since cure is more likely if the cancer is small when it is found. Cancers which are small can occur without symptoms and examinations will increase the chances of early detection.

Is cancer the only serious result of DES exposure before birth?

Cancer is the only potentially life-threatening risk so far identified in thousands of DES daughters who have been examined thoroughly. The oldest women exposed to DES-type drugs before birth are, however, not yet 40 years old. It is not possible to know now whether there will be other problems as these women grow older.

Does the risk of cancer depend upon the amount or the timing of the DES-type drug taken during pregnancy?

Exposure during the first five months of pregnancy does appear to be an important factor. It also appears that dose and duration may affect risk to some extent.

How long should DES-exposed daughters be concerned about the possibility of cancer?

It is not known how long such daughters are at increased risk of

developing clear cell adenocarcinoma of the vagina or cervix.

Are there any symptoms of DES-exposure such as vaginal discharge?

Occasionally DES - exposed daughters complain of vaginal discharge. Most of them have no symptoms. Unusual vaginal bleeding in DES - exposed daughters requires prompt medical advice.

Is there any reason for DES-exposed daughters to expect an increased chance of complications with their pregnancies?

DES - exposed daughters may have miscarriages and stillbirths somewhat more frequently than women who were not exposed to DES before birth. Many DES-exposed daughters have successfully given birth to full term babies. If you become pregnant, your physician may recommend more frequent examinations than usual as your pregnancy progresses.

Does DES exposure change menstrual periods?

At this time, it does not appear that DES exposure has any major effect upon the menstrual pattern or ovulation. Some DES - exposed daughters, like some other women, experience menstrual irregularity that can be temporary or continuing.

Is there reason to believe that DES-exposed mothers or daughters should avoid taking birth control pills?

In view of the lack of information on the long - term effects of estrogens, caution must be exercised regarding the use of oral contraceptives and other estrogens. The U.S. Food and Drug Administration (FDA) controls the labeling of estrogens and oral contraceptives. Indications against their use, and various warnings and precautions including adverse reactions, must be listed in a package insert by the manufacturer, with each package dispensed. Ask your physician to discuss with you possible hazards of this form of contraception. Like other patients, DES - exposed daughters should be followed closely by their doctors if they choose oral contraceptives. Other standard means of contraception can be used.

Postcoital contraception with estrogens, "the morning-after pill" (consisting of a large amount of DES twice daily for five days), should be used by a DES - exposed woman only after she has been fully informed about possible hazards *and* if she and her physician judge that no alternative is acceptable. Use of DES as a morning-after pill is approved by the FDA only in emergency situations of rape or incest.

What other uses of estrogen should be avoided by DES-exposed women?

DES or DES - type drugs should not be used to dry up milk in breasts of new mothers who do not breast feed their infants. Postmenopausal replacement estrogens should be used only after carefully considering alternative methods with your physician. Your preference and the physician's judgment should be discussed.

Does sexual intercourse have any adverse effects on the changes associated with DES- type drugs?

No adverse effects have been reported.

With the passage of time, is there an increase in severity of adenosis or other changes associated with DES-exposure of daughters?

Adenosis over time may disappear spontaneously without therapy. Structural changes of the cervix and vagina may also disappear over time.

If a cancer is found, what is the treatment?

Removal by surgery or radiation therapy is the usual method of treatment. Either one of these forms of treatment may result in the loss of the ability to bear children. However, the

cancer can be cured, especially if detected early. In most cases, the patient will be able to have satisfactory intercourse. Each patient should discuss these possibilities with her physician.

How often should a DES-exposed daughter be examined?

The frequency of examination depends upon what is found during the initial examination. In general, most DES - exposed daughters should be examined on a yearly basis. In some cases a daughter may be asked to return more often.

DES-type drugs that may have been prescribed to pregnant women

Nonsteroidal Estrogens

Benzestrol	Mikarol
Chlorotrianisene	Mikarol forti
Comestrol	Milestrol
Cyren A.	Monomestrol
Cyren B.	Neo-Oestranol I
Delvinal	Neo-Oestranol II
DES	Nulabort
Des Plex	Oestrogenine
Dibestil	Oestromenin
Diestryl	Oestromon
Dienestrol	Orestol
Dienoestrol	Pabestrol D.
Diethylstilbestrol Dipalmitate	Palestrol
	Restrol
Diethylstilbestrol Diphosphate	Stil-Rol
	Stilbal
Diethylstilbestrol Dipropionate	Stilbestrol
	Stilbestronate
Diethylstilbenediol	Stilbetin

Digestil
Domestrol
Estilben
Estrobene
Estrobene DP.
Estrosyn
Fonatol
Gynben
Gyneben
Hexestrol
Hexoestrol
Hi-Bestrol
Menocrin
Meprane
Mestilbol
Methallenestril
Microest
Stilbinol
Stilboestroform
Stilboestrol
Stilboestrol DP.
Stilestrate
Stilpalmitate
Stilphostrol
Stilronate
Stilrone
Stils
Synestrin
Synestrol
Synthoestrin
Tace
Vallestril
Willestrol

Nonsteroidal Estrogen—Androgen Combinations

Amperone
Di-Erone
Estan
Metystil
Teserene
Tylandril
Tylosterone

Nonsteroidal Estrogen—Progesterone Combination

Progravidium

Vaginal Cream—Suppositories with Nonsteroidal Estrogens

AVC cream with Dienestrol
Dienestrol cream

In a number of locations across the country DES daughters and mothers have organized into groups to exchange information about exposure to DES - type drugs before birth and to provide psychological support for their members. In 1980 such groups existed in

the New York metropolitan area, Philadelphia, the Boston area, the Washington, D.C. area, Portland, Oregon and in California, Connecticut, Florida, Michigan, and New Jersey. For names, addresses and telephone numbers, write to Department DES, National Cancer Institute, Office of Cancer Communications, Bethesda, Maryland 20205.

For additional information write to the Department DES, National Cancer Institute, Office of Cancer Communications, Bethesda, Maryland 20205, or call toll-free the nearest Cancer Information Service. For areas not listed below, call 800-638-6694.

Alabama 1-800-292-6201
Alaska 1-800-638-6070
California From Area Codes (213), (714), and (805), 1-800-252-9066
Colorado 1-800-332-1850
Connecticut 1-800-922-0824
Delaware 1-800-523-3586
District of Columbia (Includes suburban Maryland and Northern Virginia) (202) 636-5700
Florida 1-800-432-5953
Georgia 1-800-327-7332
Hawaii, Oahu: 524-1234
Neighbor Islands: Enterprise 6702
Illinois 800-972-0586
Kentucky 800-432-9321
Maine 1-800-225-7034
Maryland 800-492-1444
Massachusetts 1-800-952-7420
Minnesota 1-800-582-5262
Montana 1-800-525-0231
New Hampshire 1-800-225-7034
New Jersey 800-523-3586
New Mexico 1-800-525-0231
New York State 1-800-462-7255
New York City (212) 794-7982
North Carolina 1-800-672-0943
North Dakota 1-800-328-5188
Ohio 1-800-282-6522
Pennsylvania 1-800-822-3963
South Dakota 1-800-328-5188
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